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Ralf Rogowski*

Industrial Relations as a Social System**

The article starts with a criticism of John Dunlop's systems theory of industrial relations. The article argues that some of the weaknesses of Dunlop's approach can be overcome by a systems theoretical conceptualisation of industrial relations based on Niklas Luhmann's theory of autopoietic social systems. It discusses five types of social systems that Luhmann's theory offers to characterise industrial relations as a social system: a set of interaction systems, an organisation system, a conflict system, an immune system and a function system of society. The article proposes to adopt a view of industrial relations as a fully-fledged function system operating within the world society. In its last part it sets out the major characteristics of such an autopoietic industrial relations system.

Industrielle Beziehungen als Soziales System

Ausgehend von einer Kritik an John Dunlops Systemtheorie industrieller Beziehungen, wird in dem Beitrag vorgeschlagen, Schwächen des Dunlopschen Ansatzes mit Hilfe einer Systemtheorie industrieller Beziehungen auf der Grundlage der Theorie autopoietischer Sozialsysteme von Niklas Luhmann zu überwinden. Der Artikel diskutiert fünf Typen von Sozialsystemen, die Luhmanns Theorie anbietet, um industrielle Beziehungen als Sozialsystem zu definieren: als Verbund lose gekoppelter Interaktionssysteme, als ein Organisationssystem, als ein Konfliktsystem, als ein Immunsystem und als ein gesellschaftliches Funktionssystem. Plädiert wird schließlich für eine Interpretation des Systems industrieller Beziehungen als voll entwickeltes Funktionssystem, das in der Weltgesellschaft operiert. Im abschliessenden Teil werden wesentliche Charakteristika eines solchen autopoietischen Systems industrieller Beziehungen vorgestellt.

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Systems theory can claim to have been one of the most influential approaches in both national and comparative accounts of industrial relations since the 1950s (Bean 1994: 2-3). In particular John Dunlop's *Industrial Relations Systems*, first published in 1958¹, has had a lasting impact on national and international industrial relations research (Meltz 1991; see also Schienstock 1982: 32-59; Hyman 1989, ch. 5). His approach was based on the then fashionable sociological theory of social systems of Talcott Parsons. However, since the 1950s general systems theory and social systems theory have developed and matured and encountered recently a major paradigm shift in which the structural-functionalist view is being replaced by an autopoietic understanding of social systems. In the following I shall use Dunlop's systems theory approach as the background against which an alternative approach to the systems theoretical conceptualisation of industrial relations, based on Niklas Luhmann's work on autopoietic social systems, will be developed. I propose to adopt a new view of industrial relations as a fully-fledged autopoietic function system operating within the world society.

1. A Critique of Dunlop's Systems Theory of Industrial Relations

Dunlop justifies his usage of systems theory with several direct references to Parsons' theory of social systems. He considers systems theory in general, and Parsons' analysis of the economic system as social system in particular, to be „suggestive for organising insights and observations about the industrial-relations aspects of behaviour in industrial society“ (Dunlop 1958: 5). For Dunlop systems theory advances beyond previous approaches in industrial relations research, which he disqualifies as „classifications in the spectrum of labour peace and warfare“. He expects from an application of Parsons' systems theory that it can „provide *analytical* meaning to the idea of an industrial relations system“ (Dunlop 1958: 3 (Dunlop's emphasis)).

Parsons' theory of society includes both an analysis of the structure of society and a theory of social evolution. The theory of evolution is based on a concept of societal modernisation, which is characterised as a process of functional differentiation of the social system into that are specialised to fulfil functions for the system at large. Primitive societies are characterised according to Parsons by a low degree of differentiation into social subsystems whereas modern societies are characterised by structural differentiation of the economic, the political, and finally the cultural system, respectively achieved by the Industrial Revolution, the Democratic Revolution, and the Educational Revolution (Parsons 1966 on the theory of the three revolutions separating early from late modernisation).

¹ The 1958 edition of *Industrial Relations Systems* was reprinted several times and then republished in 1993 by the Harvard Business School. The 1993 edition contains a new Preface and a Commentary on Industrial Relations as an academic discipline, comparing it with Labour Economics and Human Resource Management. However, there are hardly any alterations to the main text.

Dunlop's starting point is to call the industrial relations system „an analytical subsystem of an industrial society on the same logical plane as an economic system“ (Dunlop 1958: 5). This, however, deviates from a Parsonian view in which the economic system is one „functional“ subsystem of the overarching social system when it is decomposed according to the four functional imperatives (see below). For Parsons, the industrial relations system can only be a subsystem of a subsystem, most likely a subsystem of the economy. Thus, the industrial relations system cannot be on the „same logical plane“ as the economic system.

In line with Parsons' theory of social evolution Dunlop's theory of industrial relations focuses on differentiation and modernisation processes both in society and in industrial relations. Dunlop calls industrial societies „modern“ when relations of managers and workers are formally arranged outside the family, when these relations are distinct from political institutions, and when the industrial relations system has an existence separate from the economic system.

Dunlop is inspired by Parsons' theory after its complete systems-theoretical turn, as outlined in Parsons' and Smelser's „Economy and Society“ of 1956². Social action is conceived after this turn as the result of a combination of structural forces of the social system³. These forces derive from four „pattern variables“ which describe functional imperatives: adaptation, goal-attainment, integration and latent-pattern maintenance.

These pattern variables, known as the AGIL scheme, represent not only the conditions for social action but also describe both the functions of the main social subsystems and the functions of the surrounding systems. Thus, the four main social subsystems of society are each characterised by one of the four functions: the economy by adaptation, the polity by goal-attainment, law and other mechanisms of

² Parsons' theory developed in three phases: from the study of the structure of social action as voluntaristic, non-deterministic action (Parsons 1937) to an analysis of the structure of social interaction as the basis of society as a social system (Parsons 1951) and then into a theory of so-called pattern variables and generalised media of communication that create the structures of the social system (Parsons 1955, Parsons and Smelser 1956, and most of the „late work“ of Parsons). Initially, Parsons' analysis of the structure of society was characterised by a tension between action theory and systems theory, a tension which was resolved in favour of systems theory after the publication of „The Social System“ (1951), and in particular after „Economy and Society“ (1956 with N. Smelser). The emphasis shifted from developing a systems theory based on conditions of social interaction to constructing social systems according to functional imperatives derived from a general scheme of pattern variables.

³ An insightful and informative discussion of Parsons' „systems-theoretical turn“ can be found in Habermas' *Lifeworld and System*, Vol. 2 of *The Theory of Communicative Action* (1987). Habermas criticises Parsons for his deficit in „action theory“, which Habermas alleges to result in neglecting the analysis of the lifeworld context of social systems. However, Habermas' criticism is ultimately driven by the normative concern to „defend the subject“ in the analysis of society. Thus, despite his integrative theory building, it is in fact Habermas who limits the theorising of society and excludes theories that are not centered on subjects and their „communicative actions“.

social control by integration and „the locus of cultural and motivational commitments“, e.g., family and cultural institutions, by latent-pattern maintenance (Parsons and Smelser 1956: 46-53). Furthermore, the surrounding systems are also characterised by these functions. Whereas the social system is characterised by integration, the cultural system is characterised by latency, the personality system by goal-attainment, and the behavioural organism by adaptation.

In a „note“ added to his outline of basic features of an industrial relations system,⁴ Dunlop offers the following application of Parsons' differentiation concept and his four functional imperatives to the study of industrial relations. A quotation from this note demonstrates Dunlop's use of systems theory. In addition it introduces the main components of Dunlop's own conception of an industrial relations system:

„The functional differentiation of an industrial relations system and the corresponding specialised structures or processes may be defined as follows: (1) Adaptive – The regulatory processes or rule making in which the specialised output is a complex of rules relating the actors to the technological and market environment and the frequent changes which pose problems of adaptation to the actors. (2) Goal Gratification – The polity or political functions in the subsystem are specialised toward the contribution of survival or stability of the industrial relations system and to survival and stability of the hierarchies of the separate actors which is requisite for the attainment of goals by the actors. (3) Integration – The function of maintaining solidarity among the actors in the system is contributed by the shared understandings and common ideology of the system relating individual roles to the hierarchies and hierarchies to each other in turn. (4) Latent-pattern Maintenance and Tension Management – The function of preserving the values of the system against cultural and motivational pressures is provided by the role of the expert or professional in all three groups of actors in the system“ (Dunlop 1958: 30).

Dunlop uses Parsons' „pattern variables“ as a classification scheme for the presentation of system components („rules“, „hierarchies“, „ideologies“, and „experts“) which he considers relevant to his comparison of national industrial relations systems. However, Dunlop subscribes only formally to Parsons' ideas. In fact, he does little more than presenting his own understanding of industrial relations in the Parsonian language of the AGIL scheme. Neither in the theoretical outline nor in the comparative study do Parsons' insights in the four functional imperatives guide Dunlop's conception of an industrial relations system.

Dunlop's own theory is based on four „elements“ which appear in various constellations in the above quotation: actors, contexts, ideologies, and rules. The separate existence or „autonomy“ of industrial relations systems is shaped by these four „elements“. Dunlop discusses them separately in his theoretical outline, in which he characterises the „elements“ as follows: the three main *actors* are management, workers and government agencies; *contexts* consist of technology, market constraints, and the power distribution in society; and the *ideologies* of the actors must resume around a common set of ideas that guides the allocation of acceptable roles to the actors. The last, and most crucial „element“ in Dunlop's theory of autonomous industrial relations, is the concept of *rules* governing the relations of industrial actors. This body of rules, which includes rules on procedures for the establishment and

⁴ In the 1993 edition of *Industrial Relations Systems* the „note“ was omitted.

administration of substantive rules, constitutes „the center of attention in an industrial-relations system“ (Dunlop 1958: 13). In Dunlop's view, the specific character of industrial relations systems derives from rule making independent of decision-making in the economic system.

Dunlop's „elements“ have been widely discussed in industrial relations theory. Shalev, for example, criticises Dunlop for a meaningless use of the ideological factor: „his materialistic theoretical bias, explicitly seeking in 'technological and market forces' rather than 'political and ideological considerations' the key to national diversity in industrial relations, precluded meaningful utilisation of ideology as an important variable.“ (Shalev 1981: 251) The element „contexts“ has been criticised of lacking any justification for selecting only the three factors of technology, markets and power. Other authors argue that the element „actors“ needs further differentiation. Employees should be divided into organised and non-organised employees and employers into employer associations and single members (for references see Schienstock 1982: 40-46). However, these authors misunderstand Dunlop's abstract notion of the tripartite structure of actors. As part of the tripartite relationship, each actor is conceived in Dunlop's model as a complex and hierarchically ordered entity whereby their respective hierarchies influence – and are influenced by – rule making and the substance of the rules of the industrial relations system (see also Schienstock 1982: 40).

In general, Dunlop's elements must be criticised for a lack of theoretical deduction. There is no definition of „element“ in his theory, and it is probably impossible to find a unifying characteristic of those heterogeneous factors which Dunlop calls elements. Dunlop reveals a lack of rigour in this respect in his theoretical discussion.

Dunlop uses various, not always coherent, approaches to discuss or to classify rules and procedures. His main scheme of rules reflects his distinction of „elements“ and operates with five „ideal types“ of industrial relations rules and procedures, all linked to the three „actors“ and their relationships (Dunlop 1958: 13-16; 34-58; 76-77; 92-93; 127; 342-379). Rules and procedures are determined for Dunlop by (a) managerial hierarchy; (b) specialised governmental agencies; (c) worker hierarchy; (d) joint management and worker hierarchy; and (e) tripartite rule making of management, workers and state agencies. In addition he sometimes uses distinctions which are close to legal classifications when he separates administrative regulations, collective agreements and customs and traditions in the work place. In a more descriptive fashion he also distinguishes between compensation rules, disciplinary rules, and job aspiration rules.

Dunlop's analysis of rules and rule making can be criticised on a number of points. In trying to advance beyond descriptions in his analysis of rules, he merely mentions different sources of rule making. He does not, however, discriminate between those sources that are internal and those that are external to the industrial relations system. Dunlop can be criticised in general for economic reductionism, which is expressed in a tendency to view the „economic development“ as ultimately

responsible for rules and rule making: „Industrialization proliferates rules“ (Dunlop 1958: 343).

My main criticism is related to Dunlop's lack of analysis of the actual process of rule making. Although it is emphasised throughout his study that rule making creates the centre of the theory of industrial relations, he is ultimately unable to analyse within the limits of his methodology how these rules are created by the system. Schienstock rightly criticises Dunlop for neglecting decision-making processes and for conceiving actors only as structural entities (Schienstock 1982: 40-46 and 55-59). Dunlop makes no effort to study the actual processes that generate the stable „grid of rules“ at the various levels of national industrial relations systems.

It is both astonishing and revealing that Dunlop's theory of industrial relations systematically neglects not only the contribution of collective bargaining and grievance procedures to rule making but the analysis of collective bargaining as such (see also Meltz 1991: 13-4)⁵. There is no separate analysis of the process and structure of collective bargaining and arbitration procedures in his analytical study of industrial relations systems. Grievance procedures are only briefly discussed at a late stage of the analysis where they are conceived solely as mechanisms for the settlement of disputes but not as mechanisms for generating rules (Dunlop 1958: 367).

Furthermore, his approach to procedures is half-hearted. Procedures are not important as an independent object of Dunlop's theoretical and comparative study but only insofar as „procedures are themselves rules“ (Dunlop 1958: 13). Dunlop is preoccupied with the substantive content of rules, which supposedly reveals a higher degree of uniformity than procedural rules. Unfortunately, he makes no use of his observation that institutional forms of rule application or procedures „particularly well reflect the characteristics of a national industrial relations system“ (Dunlop 1958: 367). The assumption that „a diversity of procedures may still result in similar substantive rules“ (Dunlop 1958: 26) seems to justify an almost complete neglect of the study of procedures in his comparison.

The theoretical and practical limits of Dunlop's systems-theoretical endeavour to analyse the industrial relations system can be further demonstrated with respect to his analysis of the unity of the industrial relations system. In the last section of his theoretical „note“ Dunlop tries to show how differentiation within the AGIL pattern of Parsons' functional imperatives contributes to establishing the „unity“ of an industrial relations system:

„It can be seen how each of these functional differentiations contribute to each other and to the unity of an industrial-relations system. (A-G) The rule making contributes to the attainment of stability and survival, and stability in turn requires a grid of rules. (A-L) The technical problems involved in rule making contribute to enhance the role of the professional or expert, and his role in turn produces a reduction of tension (a literal drawing of the „heat“) among the actors and is the repository and defender of the values of the system. (G-I) The attainment of stability and survival requires shared understandings relating the actors to each other, and an effective integration

⁵

In later studies Dunlop showed some interest in the analysis of negotiations and collective dispute-resolution mechanisms. See Dunlop 1984.

contributes to the achievement of stability and survival. (L-I) The reduction in tensions and the preservation of values contributed by the professionals is a force for integration, and the shared understandings contribute toward enhancing and maintaining the role of the professional or expert. The functional differentiations of the system reinforce each other and unify the industrial-relations system“ (Dunlop 1958: 30-31).

Dunlop, like Parsons, discusses the problem of unity as a problem of structure. Unity is conceived in this forced application of the four pattern variables as a product of rather static links among the system components which are supposed to reinforce each other and thus to contribute to system maintenance („stability“, „survival“, „integration“). However, achieving unity does not seem to be a problem for the system. The links among the system components miraculously unify the system.

In fact, unity in this discussion is merely the construct of an external observer. It is not analysed as a vital concern for the industrial relations system itself. Dunlop's analysis conveys the impression that the problems of the system derive from external rather than internal sources. It is beyond Dunlop's sociological imagination that threats to the unity and, indeed, to the existence of the industrial relations system itself could derive from the internal processes and links among the system components.

Dunlop conceptualises the industrial relations system both as a subsystem of society at the national level, as a system of industry-wide collective bargaining, and as a system of work relations in a single enterprise. Although this seems to correspond with common understanding in industrial relations research, it is unclear how this is related to his systems theory approach. Dunlop pays little attention to the relation of these three levels of the industrial relations system. He can therefore be criticised for having acknowledged the scope and the different levels of the industrial relations system only with respect to its external relations but not with respect to the internal structure and processes of the industrial relations system.

Dunlop's approach is an input-output analysis, which places high emphasis on contextual factors that influence the structure of the system. Dunlop shows in detail how the content or substance of rules reflects the various contexts of the industrial relations system. The contextual influence varies inversely with the structural complexity of the industrial relations system: „The smaller the unit to which the term (industrial relations system, R.R.) is applied, the larger the context, and in general the larger the influence of givens outside the system“ (Dunlop 1958: 24). The idea is that workplace rules in a single enterprise are more influenced by technical and market constraints or the distribution of power in society than rules that apply to an industry or a national industrial relations system. The question remains, however, of what constitutes the „core“ of an industrial relations system which is not determined by external forces and which integrates both large and small units.

In summary it can be stated that Dunlop's systems theory remains at a classificatory level. This is probably related to the lack of understanding of the theory

of structural functionalism, which he himself admitted⁶. Indeed, his systems-theoretical understanding has hardly exhausted the potential of Parsons' systems theory to conceptualise industrial relations systems (see also Wood et al. 1975 and Singh 1976). Furthermore central areas of industrial relations like collective bargaining, arbitration, grievance handling, negotiations between worker representatives and management, and political exchanges at national level are either neglected or poorly treated in the study. Although rule making in industrial relations is central in Dunlop's discussion his study reveals a lack of interest in considering the real processes of the creation and application of rules through procedures.

It seems due to Dunlop's rather mechanical understanding of systems theory, which tends to conceptualise industrial relations as a trivial machine, that he underestimates problems related to the internal complexity of the system. More than forty years after the publication of his study the reader is astonished at the lack of sensitivity to the threats to the system which derive from internal processes. Internal complexity creates problems both for the structure and for the elements of the system. The need to reduce internal complexity is an important reason, for example, for the formalisation of interactions between collective actors or between individual and collective actors. However, only recently have we begun to analyse these interactions as communication processes in which the system reproduces itself.

The theory of social systems has evolved from a closed systems approach to an open systems approach and has most recently been developed into a theory of operationally closed but cognitively open systems. Dunlop applied the open systems paradigm to the study of industrial relations. In taking seriously the recent „paradigm shift“ in systems theory, which replaces concerns with structures and functions of social systems with analyses of communication processes that are constitutive of the self-reproduction or autopoiesis of the system, we can advance beyond the Dunlopian approach to industrial relations.

2. The Social System of Industrial Relations

The author who stands for the recent paradigm shift towards autopoietic social systems theory is Niklas Luhmann. Before a concept of industrial relations based on Luhmann's approach is proposed, I shall briefly indicate basic features of autopoietic social systems theory that I see to be relevant for a discussion of autopoietic industrial relations. In particular five types of social systems, which can be derived from Luhmann's approach, are discussed as possible candidates to characterise the industrial relations system as a social system. In the final parts, a proposal to define industrial relations as a fully-fledged autopoietic function system operating in the world society is presented.

2.1 Basic Features of Autopoietic Social Systems

⁶ Dunlop thought of his own application of Parsons' system theory that it „may not be acceptable to Professor Parsons, and it may reflect a lack of understanding of his theoretical system“. See Dunlop 1958: 30, Footnote 30.

Luhmann's theory overcomes the Parsonian input-output model or open systems approach by focussing on the social system's capacity of self-reproduction or autopoiesis. Luhmann borrows the concept of autopoiesis from general systems theory. Autopoiesis was originally invented as a concept in biology to describe the essence of living organisms. In discussions within general systems theory it became a powerful tool in understanding the basic principles of self-reproducing and self-organising systems. In applying the abstract autopoiesis concept Luhmann distinguishes between elements and structures of social systems. Self-reproduction occurs at the level of elements and not at the structural level. Autopoietic social systems are cognitively open at the structural level, but closed at the operational level. This is a radical solution insofar as no environmental factors can have direct influence on the system's reproduction.

Probably the most startling aspect of Luhmann's theory is his assertion that social systems consist of communications. He rejects the conventional view that sociological analyses have to start from actions or interactions. For him communications are the basic elements and social systems reproduce themselves through self-reference of communications. Thus function systems are systems of communication. Each operates with specific forms of communication. Boundary maintenance is achieved within function systems by applying a system-specific binary code.

Luhmann's general theory distinguishes three levels of analysis of social systems as systems of communication: interaction, organisation and society (Luhmann 1982, ch. 4). Furthermore, he distinguishes types of social systems that are characterised by special relations either to specific social systems or to society at large. These are conflict systems and immune systems.

Luhmann describes *interaction systems* as social systems, which are formally characterised as communication between participants who are present. The presence of the participants enables mutual perception. Communication in interaction systems consists of both verbal and non-verbal communication that can be perceived. The perception of communication among actors who are present is always reflexive: ego's perception can be perceived by alter and vice versa (Luhmann 1975: 23-24). Luhmann distinguishes between communication and structure in interaction systems. The structure of interaction systems arises from mechanisms like the sequential order of relevant events, the use of topics or factual themes in discussions, and the restriction that participants are not allowed to speak at the same time, but only one after the other. „When such structures are formed, centered interdependencies emerge" (Luhmann 1995a: 415). However, the structure of interaction systems is ultimately shaped by the autopoietic requirement that communication must continue. Structures of interaction systems are not particularly stable. Topics or themes can be changed easily and the participants have time constraints due to other commitments. Structurally interaction systems show a low degree of autonomy. Interactions are episodes with a strong tendency to disappear when the communications among present actors ends. To become interaction systems, episodes must be combined

(Luhmann 1995a: 406/7). In addition, interactions must be able to reproduce themselves through self-constituting self-reference.

The second type of social system, *organisation*, is characterised by a form of communication without those communicating having to be present. The most important aspect of organisations is membership. The relationship between the organisation and its members is impersonal. Organisations operate with particular forms of communications. These are decisions. Thus the autopoiesis of organisations is conceived as the recursive communication of decisions. Only on this basis can structures, like organisational goals and programs, internal hierarchies, or membership rules, emerge⁷.

In Luhmann's theory of social systems as systems of communication contradictions and conflicts play an important role. Social systems create contradictions through communication of negation. Contradictions form part of the self-reference of social systems. Contradictions are a result of the requirement of unity of the three elements of communication: information, utterance and understanding. „Only a communication's expectation of unity constitutes a contradiction, by choosing what communication brings together. Contradictions emerge by being communicated.“ (Luhmann 1995a: 365) Contradictions and conflicts operate with negative communication relations either to another social system or to society at large. They create the basis for two types of social systems, which are called conflict system and immune system.

For Luhmann, a *conflict system* is characterised by four aspects: contradiction, conflict, negative double contingency, and a parasitic position inside another social system. Contradiction is defined as non-acceptance of a communication or, in other words, a situation in which expectations are not fulfilled. A contradiction only becomes a conflict when the contradiction is voiced and the refusal of expectations is communicated back as negation of the communication. Luhmann acknowledges the possibility of a conflict system, based on recursively communicated negations, which becomes an independent social system of a particular kind (Luhmann 1995a: 388-390). In interactional conflict systems, the situation of double contingency is redefined as one of „negative“ double contingency in which ego refuses to do what alter wishes since ego expects alter not to do what ego wants. In itself, this alternative of a reversed structure of expectations is highly integrative, allowing a wide range of actions to be incorporated within the basic assumption of opposition. Anything that can be assumed to be detrimental to the other party is potentially part of a conflict system. The destructive consequences of the new conflict system are thus felt in the social system in which the conflict system originated. For Luhmann a conflict can develop into an

⁷ „Die folgenden Überlegungen gehen davon aus, daß Organisationen entstehen und sich reproduzieren, wenn es zur *Kommunikation von Entscheidungen* kommt und das System auf dieser Operationsbasis *operativ geschlossen* wird. Alles andere – Ziele, Hierarchien, Rationalitätschancen, weisungsgebundene Mitglieder, oder was sonst als Kriterium von Organisation angesehen wird – ist demgegenüber sekundär und kann als Resultat der Entscheidungsoperationen des Systems angesehen werden.“ (Luhmann 1995b: 23, Luhmann's emphasis).

independent conflict system only within another social system. From the covering system's point of view the conflict system is the „excluded, included third“ (Luhmann 1988: 212). Luhmann describes this relationship with a rather unfortunate biological metaphor as a relationship between a non-symbiotic parasite and its host. The metaphor is borrowed from Michel Serres' study on „social parasites“ (Serres 1980). The conflict system is „parasitic“ in the sense that it absorbs attention and resources of the „host“ system.

However, contradictions and conflicts circulate in society and can be activated against societal structures. And to some extent society needs to protect itself from the destructive consequences of conflicts. This is the starting point for Luhmann to conceptualise a different type of social system which he calls the *immune system* that protects society at large. The idea of an immune system is not simply to protect society from conflicts. Its function is not to maintain attacked structures and to restore the status quo but to protect autopoiesis. The function of a social immune system lies in the continuation of communication by other means. Thus immune systems do not avoid conflicts but merely offer suitable forms of communication. The overriding aim is to avoid the use of open violence that, among other negative consequences, interrupts communication necessary for the self-reproduction of society (Luhmann 1995a: 369).

In Luhmann's theory society is the overarching social system that includes all other social systems. Society is primarily differentiated into *function systems*. The major function systems are law, politics, economy, art, education, religion, Luhmann transcends Parsons' approach of viewing society as being controlled by (only) four pattern variables (Luhmann 1982, ch. 3). For Luhmann the modern society does not consist of a fixed number of function systems. There is always the possibility of new function systems that manages to achieve operational closure. However, this happens nowadays increasingly under conditions established by the emerging world society (Luhmann 1997, Vol. II: 760/1).

2.2 *Five Types of Social Systems*

We can deduce from our short introduction of Luhmann's theory five types of social systems as possible candidates to characterise industrial relations as a social system. First, there are the three types of social system: interaction system, organisation system, and function system of society. Second, there are the two additional types that operate with contradicting communication relations either in relation to another social system or to society at large, which are called conflict system and immune system accordingly.

2.2.1 *Industrial relations as a set of interaction systems*

An analysis of industrial relations as interaction systems focuses on the systems of negotiations in which actors are present. These are in particular collective negotiations, generally known as collective bargaining. The communication in collective bargaining is structured by an agenda, by topics and by a procedure that

prescribes formal rules of participation in communications. These negotiations are episodes that are linked through their results, i.e. collective bargaining agreements, which are supposed to be renegotiated after a certain period of time. Indeed, combination of episodes (Teubner 1987b) is a mechanism that equally applies to the industrial relations system. Interactions are episodes in the „carrying on“ of society. Structures created in industrial relations episodes are used in later episodes. Independent industrial relations discourses with elaborate grievance procedures and collective bargaining styles evolve from these structures. In the end an industrial relations culture evolves.

Interaction systems of the industrial relations system have generally achieved a high degree of structural autonomy. Collective bargaining and grievance procedures both define which claim or grievance they can process in procedures that are established by the systems themselves. These negotiation systems define their communicative elements through self-reference and are therefore autopoietic systems.

The industrial relations literature provides many descriptions of the autonomous character of collective bargaining that allude to self-reproductive concerns of the industrial relations system. Wolfgang-Ulrich Prigge, for example, defines collective bargaining as a negotiation system of interorganizational self-governance which is able to determine topics of discussion, processes or phases of negotiations and the roles of the negotiators (Prigge 1987: 33-5)⁸. And Walther Müller-Jentsch describes autonomous collective bargaining as consisting of the two related aspects of conflict resolution and rule making (Müller-Jentsch 1986, ch. 12).

Industrial relations communications are not only the result of interactions but they also describe themselves as industrial relations negotiations. Furthermore, collective bargaining negotiations link as interaction systems through mutual recognition. They form a set of independent interaction systems.

If industrial relations are viewed as a set or combination of interaction systems, it might be asked if the set itself has evolved into a new kind of system through the combination of interaction systems. The set might have achieved the capacity to define the various interaction systems as its elements. In this case negotiations in industrial relations interaction systems are no longer randomly related communicative episodes. These interaction systems might be linked through their communications. Several other system components of interaction systems might be related according to a higher, or second order which has evolved at the level of industrial relations at large. In this case it would be insufficient to describe industrial relations only in terms of a set of loosely related interaction systems.

2.2.2 Industrial relations as a hypercyclically constituted network of organisations

An approach to analyse industrial relations as a second order system is to use organisation and network theories. Organisation theory can be applied at two levels:

⁸ Prigge's approach is an open systems approach. His input-output analysis focuses on institutional structures rather than communication processes.

at the level of participants of industrial relations interactions and at the level of the industrial relations system at large.

The organisational account of industrial relations usually focuses on the special characteristics of industrial relations as interactions between organisations of employees and employers. Unions or worker representatives and employer associations or employer representatives carry out collective bargaining on a meso-level of industry or region and on a micro-level in the company or the plant.

The topics of industrial relations communications are the result of organisational processes. Claims in collective bargaining are generated in internal processes within unions and employer associations. However, industrial relations research has shown that the relation between the size of the claim and the outcome of bargaining is rather constant over time⁹. This finding can be interpreted from a systems theoretical point of view to indicate both the separate existence and the links between the claims-generating organisations and the negotiation system. The organisations that are responsible for the claims recognise the separate existence of the negotiation system by referring to experiences with claims in previous negotiations. Unions and employers define their roles by referring to the negotiation system and to its conditions which influence the generation of claims.

It is thus necessary to switch attention to the collective negotiation system as such. There are a few accounts in industrial relations research that use variants of organisation theory to describe the negotiation system. Allan Flanders, for example, characterises it as a political institution. He emphasises the power relationship between organisations and, in particular, the capacity of collective bargaining to establish rules as an alternative to statutory regulation (Flanders 1970: 220-1). One could also think of applying the systems theoretical view on autopoietic organisations (see for example Teubner 1987a; Luhmann 1995b; Baecker 1999).

However, a certain uneasiness remains in viewing the industrial relations system simply as an organisation system. Most industrial relations systems are certainly capable of communicating their internally achieved results to the external world (Luhmann 1990a: 672-687, discussed in relation to scientific and academic organisations). They define themselves through membership by inclusion of certain collective actors and by exclusion of others. They can isolate themselves from social and psychic conditions in order to follow self-generated programs and they are able to generate their own „media of positions” (Luhmann 1988, ch. 9, discussed in relation to economic organisations).

Nevertheless, there is something specific about industrial relations, which is not captured by this description. This is related to the fact that the main instrument for self-regulation and the creation of internal structures is a mutual agreement. Thus a further qualification of the organisational type of social system seems necessary. Of assistance can be Teubner's research on *networks* as autopoietic systems of a higher

⁹ Hansjörg Weitbrecht reports that the outcome of negotiations in the German metal industry remained at a level of two-third of the union claim from 1948 to 1966. See Weitbrecht 1969: 145.

order that result from a combination of the two types of social institution „contract“ and „organisation“ (Teubner 1993). „By contrast with contract and organisation, networks are higher-order autopoietic systems, to the extent that they set up emergent elementary acts (network operations) through dual attribution, and link these up in circular fashion into an operational system. They are systems which are formed through a combination of contract and organisations and which possess the major features of an autopoietic system“ (Teubner 1993: 50). Networks are collective actors, which act through other collective actors. For Teubner, examples of networks as collective actors are the „legal hybrids“ franchises and joint ventures.

In applying Teubner's idea of a hypercyclically constituted network, it can be argued that *collective bargaining* develops into an autonomous network system between organisations that becomes able to define both its norms and the status of its members, i.e., the participating collective actors. Collective bargaining creates mechanisms of self-observation and self-constitution produce its own institutional structures. The network collective bargaining system is a collective actor that acts through other collective actors. Thus interactions of unions and employer associations form a network which produces norms, defines a space and forms a unity.

2.2.3 *Industrial relations as a conflict system*

With respect to intersystemic links Luhmann's theory of social systems offers a unique option to conceptualise the industrial relations system as a social system. This option is the conflict system that develops within another social system. A conflict system takes part in communications of the host system by switching to contradictions, thereby opposing the host system's communication on principle. Contradictions enable the continuation of action in the absence of the certainty of expectations.

Luhmann emphasises the destabilising effects of contradictions on the social system. However, this destabilisation is not considered dysfunctional but rather supportive for the evolution of the system. In certain situations the conflict system achieves that structures of the host system are replaced in order to maintain the autopoietic reproduction of the system. Complex social systems need a certain amount of instability to become able to react towards perturbations both within the environment and within themselves. Examples are changing prices in the economic system, a legal concept in which criticism and even change of the law becomes a normal event and marriages, which can be terminated by divorce. Contradictions are the communication of „no“ and protect the system against petrification (Luhmann 1995a: 388-397).

Luhmann has not directly applied the idea of a conflict system to industrial relations. In his *Die Wirtschaft der Gesellschaft* (The economy of society), he only mentions the problem of „Labour“ as an example of the general problem of scarcity in economics. In this context „Labour“ is described as a „parasite“ of the economic system (Luhmann 1988: 212-223) and industrial relations are mainly treated as being an old-fashioned semantic of „Capital“ vs. „Labour“. Although Luhmann does not contest that workers need organised representation of workers' interests (Luhmann

1988: 171), he criticises unions for protecting interests in a mode which leads to inflexible labour markets. Luhmann only discusses industrial relations from an economic perspective, in which trade unions are described as instruments to increase the price of labour without any discussion of their wider role in society (Luhmann 1988: 223-224).

For Luhmann conflict systems endure when the conflict can be interpreted to show signs of general societal relevance beyond the limits of the specific interaction. Luhmann sees law and morality as mechanisms that can operationalise societal relevance of conflicts in interaction systems. Where law and morality fail to upgrade or select individual conflicts as „socially relevant“, specific organisations fulfil this function. Luhmann proposes that trade unions can be seen as organisations that select particular conflicts and enhance their status as relevant for the society at large (Luhmann 1995a: 393).

Luhmann's brief analysis of generalisation of the conflict within the conflict system (Luhmann 1995a: 392-393) does not consider repercussive effects of the generalisation on the conflict system as such. In Luhmann's approach there is no possibility that the conflict system might transform into a different type of system¹⁰. Thus in his account, a conflict system remains a conflict system despite a tendency towards generalisation of conflicts.

However, an alternative scenario can be proposed, that assumes a transformation of the very character of a conflict system through generalisation. It assumes that the conflict system can reach a level of autonomy that allows the transformation from negative communication to positive communication. During this process negative double contingency is transformed into positive double contingency. An example can be the development of those industrial relations systems that switch from conflictual communications to joint decision-making. These industrial relations systems change their reproductive basis from negative to positive forms of communication. Thus the generalisation of conflicts within a particular host system, which no longer defines the reason for conflicts as half-heartedly included thirds but as own systems problems of wider societal relevance, not only helps to preserve the conflict system but transforms the conflict system from an interaction system into a different form of social system. The conflict system acquires a new identity during this transformation process and domesticates conflict through limiting negative double contingency to situations of adversary negotiations and collective bargaining.

2.2.4 Industrial relations as an immune system of society

¹⁰ In his last major publication, Luhmann discusses social movements as a new type of social system (Luhmann 1997: 847-865). However, he does not view them on the same level as the other types of social system, in particular interactions and organisations (Luhmann 1997: 813). I thus refrain from discussing this option („a sixth option“), without, however, denying the possibility to describe industrial relations in this way. The labour movement and industrial relations could indeed be analysed in terms of an autopoietic social movement.

Luhmann's theory offers a fourth possibility to conceptualise the industrial relations system. This is to perceive it as an immune system of society.

Luhmann has demonstrated his idea of a societal immune system with respect to the legal system (Luhmann 1995a: 373-376). The legal system serves as the prime immune system of society, which guarantees communication of expectations even in case of contradiction. It permits societal communication to resort to legal forms of communication in the case of communicative breakdown in every-day life situations. The legal system operates as an immune system of society by anticipating uncertainties and instabilities internally before these uncertainties and instabilities occur in society. Law is created in anticipation of possible conflicts. It secures the continuation of communication in a modified form in case of contradiction in normal communications. Law selects certain expectations and protects them in case of conflict, which creates the basis of normativity of expectations. Experiences with conflict are generalised for this reason in anticipation of future conflicts. In modern societies law invents new problem constellations which in fact, nobody would have thought of, if law did not exist. And law declares the expectations, which arise from new problem constellations to be law. Thus law does not serve the function of avoiding conflicts but, in fact, increases the chances for conflict. It simply tries to avoid the violent carrying on of conflicts by providing a means of communication adequate to the conflict. In Luhmann's words: „Law serves to continue communication by other means“ (Luhmann 1995a: 375). Law is societally adequate when it is able to generate enough conflicts and enough internal complexity to manage these problems.

The industrial relations system can be conceptualised as an immune system similar to the legal system. The industrial relations system complements the legal system in its role as the immune system for society. In a way the industrial relations system serves as a second immune system because of the limited capacity of the legal system in handling conflicts. The legal system requires conflicts to be transformed into individual claims before they can be handled within the system. The industrial relations system is the second immune system of society, which handles collective conflicts. It serves to continue communication in the case of collective conflicts. It provides procedures that transform violent collective conflicts into negotiations.

Luhmann's „social immunology“ could be further advanced by applying the concept of immune systems to the study of functional subsystems of society. A good example of immune systems at the level of concrete social systems is the industrial relations system. Thus, in addition to the general character of the industrial relations system as an immune system of society, we find a system-specific immune system within the industrial relations system. This system is the grievance procedure and arbitration system, which serves in the capacity of an immune system in the collective bargaining system (see Rogowski forthcoming).

2.2.5 Industrial relations as a functionally differentiated societal subsystem

The four previous characterisations of industrial relations as a social system do not preclude the conceptualisation of the industrial relations system as a functionally differentiated societal system on the same plane as the legal, the economic or the political system.

Teubner's application of the idea of a hypercycle, derived from biochemical theories on the origin of life, is not restricted to the emergence of organisations as autopoietic systems. It is equally applicable to the evolution of functional subsystems of society.

Teubner describes autopoiesis as resulting from a three-step autonomisation of social systems from self-observation to self-description to autopoiesis of social systems. Autopoiesis or self-reproduction emerges from a cyclical relation of cyclical system components (= hypercycle)¹¹.

Teubner proposes a gradual evolution of autopoietic systems. He assumes that self-reference is not limited to elements (parts) but occurs with respect to other system components, i.e., structure (networks), process (production), boundary and environment (space) and the system as a whole (unity). For Teubner the hypercycle, i.e. cyclical combination of cyclical self-description of self-reference, is thus not confined to self-reference of elements but equally applies to the other system components.

Teubner has demonstrated the idea of a hypercycle with respect to the cyclical relations of the four components of the legal system: legal procedure, legal action, legal norm, and legal doctrine. In the development of the legal system from diffuse societal law to a state of relative autonomy, and then to full autopoiesis, these components first acquire identity by a process of self-reference, then are used operationally as self-descriptions of the legal system and finally are connected hypercyclically in a third process to form the autopoietic legal system (Teubner 1989, graph on p. 50).

It is possible to construct an autopoietic industrial relations system in analogy to Teubner's construction of an autopoietic legal system. Procedures, action, norms and a retained body of knowledge can be found in the industrial relations system as well.

Teubner distinguishes three stages in the evolution of a legal system: Diffuse societal law, relatively autonomous law, and autopoietic law. Industrial relations consist of diffuse societally produced system components. Workplace industrial relations rules, which are not introduced through procedures but are followed

¹¹ Teubner 1989: 44: „Gesellschaftliche Teilsysteme gewinnen an Autonomie, wenn im Subsystem die Systemkomponenten (Element, Struktur, Prozess, Identität, Grenze, Umwelt, Leistung, Funktion) selbstreferentiell definiert sind (= *Selbstbeobachtung*), wenn zusätzlich diese Selbstbeobachtungen als Selbstbeschreibungen im System operativ verwendet werden (= *Selbstkonstitution*) und wenn schließlich in einem Hyperzyklus die selbstkonstituierten Systemkomponenten als einander wechselseitig produzierend miteinander verkettet werden (= *Autopoiesis*)“.

repetitiously for reasons of tradition, are examples of such a state of an industrial relations system.

An industrial relations system has become partly autonomous when one or more of its components become self-referential. Examples of this, by analogy to secondary legal rules, are norms of recognition of employee representatives in grievance procedures or collective bargaining, which regulate the creation of norms.

The industrial relations system is hypercyclically structured when its components are not only engaged in self-reference but when the relations of its components become recursive. In an autopoietic system the elements rely on references to other system components to constitute themselves. Elements and structure become two mutually referential system components. Actions of the industrial relations system (elements) are used to define rules (structure) and rules are used to define industrial relations action (which should not be confused with industrial action).

Teubner's hypercycle concept is thus highly suggestive of a conception of an industrial relations system as a social system. It differs from Luhmann's concept which insists that autopoiesis characterises all social systems and that social systems are by definition autopoietic and cannot be partly autopoietic and partly allopoeitic (Luhmann 1987a: 318-319). According to Luhmann social systems do not differ with respect to autopoiesis. They can only differ with respect to the degree of differentiation from their societal and other environments and with respect to the degree of internal and external complexity.

Teubner's concept has the advantage of discussing the crucial question of the historical origin of autopoietic systems. Luhmann's approach seems contradictory in this respect because he adheres to a theory of differentiation of society in which autopoietic function systems are achievements of evolutionary processes but he resists conceptualising the historical origins of a particular social system before it has become an autopoietic social system.

3. The Industrial Relations System as a Function System of Society. A Proposal

I propose to view the industrial relations system as a functional subsystem of society on the same plane as the legal, the economic or the science systems. The industrial relations system has constituted itself as a fully-fledged functional social system. Although it is possible to characterise it as a conflict system within the economic system and as an immune system of society, these characterisations cannot grasp the entire nature of the industrial relations system in modern societies. Thus, in my view the modern industrial relations system is best understood as a functionally differentiated subsystem of society.

This proposal can be demonstrated by discussing the four hypotheses which Luhmann has outlined in his analysis of the economic system as a „catalogue“ for the empirical testing of the existence of a social subsystem (Luhmann 1988: 51). In

applying these hypotheses the industrial relations system can be characterised in the following way:

- Form and scope of differentiation have reached a level in modern societies which makes an autonomous industrial relation system possible that is not dominated by other function systems.
- The industrial relations system operates with a specific combination of closure and openness with respect to its elementary operations.
- The industrial relations system operates under a binary code, which represents the exclusive function of the system.
- The industrial relations system has achieved a relative prominence in society at large in its ability to arrange corporatist exchange relations with other function systems to further its autonomy.

The following outline of the proposal for a model of industrial relations as a social system discusses these four hypotheses separately.

3.1 Differentiation of an Industrial Relations System

Modern societies are functionally differentiated societies. Such a society has overcome the hierarchical mode of integration which was characteristic of stratificatory societies. A primary mode of integration in modern societies is a vertical order of mutual recognition of functional subsystems. Each function system is exclusively responsible for fulfilling its societal function.

It has been said that the industrial relations system is not a full-blown autopoietic system. Teubner argues in analogy to his idea of steps in the autonomisation of the legal system that the industrial relations system consists of autopoietic interaction systems but lacks the hypercycle of recursive relations of system components and, therefore, has not yet reached the status of a functionally differentiated autopoietic system on the same plane as the economic or the legal system (Teubner 1989: 49-56). In my view this is partly a question for the theory of an autopoietic industrial relations system and partly an empirical question about the stage in the development in the industrial relations system. My preliminary answer is that more signs point in the direction of a fully-fledged autopoietic function system.

Self-reference of the elements of the industrial relations system is not only a theoretical supposition but also an empirically observable phenomenon. Institutions and the structure of the industrial relations system are based on self-reference. However self-reference of collective communications is a highly improbable process.

In modern societies industrial relations have developed into autopoietic function systems which are recognised by other function systems. Industrial relations have developed from a conflict system into a societal subsystem, which defines itself with respect to fulfilling a function in society at large. And the function of the industrial relations system is to manage collective violence, which can occur in the relations between industrial interest groups.

Luhmann touches upon „Labour“ and its semantic opposition „Capital“ in his discussion of classes in society. He views class theory as a peculiar form of self-description of the modern society at large. Luhmann admits that the opposition of „Capital“ vs. „Labour“ as representing two classes of society has advanced beyond a mere scientific analysis of society and has achieved the status of a widely shared self-description of society. However, for Luhmann class society means a self-description of the modern society as a hierarchically ordered society. Thus, the semantic of „Capital“ and „Labour“ represents an inadequate self-description of modern society. It is an attempt of society to resist recognition of its functional differentiation into polycentric, horizontally ordered function systems (Luhmann 1985b: 148-150 and 1988b: 168-176)¹².

If Luhmann had studied the self-descriptions of the industrial relations system, he might have detected that it has achieved the status of an independent function system in society. The opposition of labour and capital has formed a negotiation system, which has become self-reproductive.

The industrial relations system is characterised by special forms of interactions between collective actors, imost important strike activities. The understanding of these interactions has changed. These changes in the self-descriptions indicate a development of the industrial relations system. Whereas the modes of regulation of strikes are the main concerns of industrial relations in its pre-autopoietic phase, the nature of its elements, i.e., collective negotiations, as conflictual or co-operative becomes prevalent in autopoietic industrial relations. Thus the self-descriptions of the system increasingly relate to the self-reproduction of its basic communications. Industrial democracy is a form of self-description of industrial relations which emphasises codetermination or participation between the collective actors.

These self-descriptions also reflect different forms of regulation of the industrial relations system, and in particular the transformation from external regulation to self-regulation. Regulation of industrial relations has historically evolved from regulation of industrial action, to regulation of arbitration and other forms of third party facilitation to self-regulation of negotiations by self-created agreements. This history of industrial relations is reflected in the order of regulatory instruments in modern collective bargaining. However, it appears in this order in a reversed form: First negotiation, then arbitration, then industrial action (Müller-Jentsch 1983).

Industrial relations fulfil the societal function of managing conflicts between collective actors. From the society's point of view the function of industrial relations is the management of collective violence. However, modern industrial relations have advanced beyond the status of a conflict system. Interaction of collective actors

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Luhmann holds the Marxist „semantic“ of „Capital“ and „Labour“ responsible for diverting societal communication from discussing the real problems of modern societies by triggering and perpetuating conflicts which are unrelated to the overwhelming and urgent „ecological“ dangers of our societies. See Luhmann 1988: 169.

occurs in the shadow of conflicts, i.e., strikes and lockouts. Negotiations both avoid and make creative use of these forms of collective behaviour or collective violence.

Most industrial relations systems are conflict systems in the beginning of their development. However, once industrial relations systems have developed structures of formalised negotiations, they acquire a function as institutions of conflict resolution for both the host system and society.

Otto Kahn-Freund has provided insightful remarks on how autonomous industrial relations, which manage conflict to achieve a number of purposes, can nevertheless revert to open conflict systems. He defines as the „cardinal feature of labour-management relations“ that „it is the conflict itself which gives rise to the formation and consolidation of groups and to the establishment of the relevant social relations as group relations“ (in „Intergroup Conflicts and Their Settlement“ in Kahn-Freund 1978: 42).

For Kahn-Freund it is not so much the aspect of the conflict relation defined as „negative communication“ between the collective actors but the conflict as form of interaction between unions and employers' associations which leads to progress in the industrial relations system. Open conflict is gradually reduced and transformed into an instrument, which becomes „the sparingly used *ultima ratio* in the arsenal of the groups“. However, Kahn-Freund noticed a danger of reversal to „primitive“ forms of conflict behaviour in complex conflict systems which rests on intergroup relations:

„Eventually this may lead to a situation in which the element of spontaneity appears in the intragroup rather than the intergroup sphere: The dissatisfaction of the workers may be directed against the union itself on account of the deliberateness and moderation of its action. It may find expression in 'unofficial' or 'wildcat' strikes, i.e., labour conflicts conducted on the workers' side by spontaneous and ephemeral 'strike committees' frowned upon by the recognised unions. At this point the story of the eternal dialectic of spontaneity and organisation in labour relations may return to its beginning: the danger of a relapse into more primitive forms of conduct is inherent in the rigidity of the social patterns of the labour dispute at the highest point of its development.“ (Kahn-Freund 1978: 44-45)

Thus Kahn-Freund is well aware that industrial relations remains a conflict system which can reverse into open conflict. However, joint decision-making introduces a new quality to the relation of collective actors. The perception of industrial action as disruption of communication, even beyond the realm of industrial relations within the industrial relations system, leads to a new understanding of industrial action. Industrial relations become responsive to societal needs, which are mainly expressed in the form of dissatisfaction with collective violence.

Industrial relations maintain the character of a conflict system when the relations of unions and employers are dominated by what industrial relations research has coined the adversarial principle (see Barbash 1979 and 1984). Adverse industrial relations operate under the maxim „what is bad for my enemy is good for myself“. As long as this attitude dominates the behaviour of actors the autonomisation of the industrial relations system is inhibited. The communication in the conflict system is restricted to negative communications with the „host“ system. However, in reality industrial relations create

themselves through their own communication structures, which substitute for the dependency on negative links with the economic communications.

3.2 *Operational Closure and Cognitive Openness*

Autopoietic industrial relations are operationally closed and cognitively open. The elements of the industrial relations system, i.e., its communications, are constituted in self-referentially closed operations. Because autopoiesis or self-reproduction is guaranteed by closed communication circuits, the industrial relations system can be open towards its societal environment.

The elements of an autopoietic industrial relations system are communications between collective actors. If the collective communications are defined as negotiations they are perceived as actions of the industrial relations system. Negotiations within an industrial relations system can be called „industrial relations acts“, in analogy to „legal acts“ which Teubner proposes as the self-constituted elements of an autopoietic legal system (Teubner 1989: 42).

Industrial relations acts constitute the core of the industrial relations system as a social system. In particular, negotiations in collective bargaining are seen as such industrial relations acts. Luhmann's discussion of communication, action and the system is directly applicable to an industrial relations system. The industrial relations system defines behaviour of collective actors only as industrial action if it is linked to negotiations within the collective bargaining system. However, this link is entirely a product of the collective bargaining system. Thus collective bargaining is defined as industrial action within the industrial relations system only when it is recognised as industrial action in collective bargaining.

Furthermore, each negotiation can be seen as a form of action. The collective bargaining system observes and describes itself as a system of negotiations. Negotiations are the communications „produced“ by previous communications relevant to the self-reproduction of the system. Reference of negotiations in collective bargaining to previous negotiations contains the self-referential process, which guarantees the autopoiesis of the industrial relations system. Thus the realisation as negotiation system is the mode of self-reference which constitutes the basis of its autopoiesis. On this basis of operational closure the industrial relations system can be open to establish intersystemic links.

Industrial relations research is used to discuss problems of operational closure and cognitive openness under the heading of the autonomy of industrial relations. The concept of autonomy of industrial relations, and in particular of collective bargaining, has a long history in the debates both of external regulation through state intervention and of self-regulation of the industrial relations system. However, autonomy is usually discussed with respect to the structure of the industrial relations system, and thus with respect to the capacity of its institutions to regulate the system's affairs. The system theoretical analysis relates the autonomy of the system to the self-

reproductive processes and understands autonomy as a necessary condition to protect autopoiesis.

Indeed it can be argued that the industrial relations system creates the grievances and claims because it defines which conflict is treated as a „grievance“ or „claim“ in the industrial relations system through reflexive processes. This perspective does not deny that grievances or claims, are defined by the individual grievant or claimant or by the union. It only assumes that grievances or claims when treated in the grievance machinery or in the collective bargaining system as products of previous communications inside the system, are influenced by the structure of the system which has a specific effect on the occurrence and definition of grievances as industrial relations acts.

3.3 The Code of the Industrial Relations System and its Operation

The core operations in the system of industrial relations are self-referential processes, which constitute its autopoiesis. A major pre-condition for autopoiesis is the ability of the system to distinguish its elementary communications. The industrial relations system must select its elements from societal communications. Applying a code, which is specific to the industrial relations system, carries out this selection of communication.

Thus industrial relations must possess a binary code in order to operate as an autopoietic function system. With a system specific code it becomes able to draw a distinction between those elements which it considers to belong to the system and those which belong to the environment. The binary code reflects the function of the industrial relations system. Only if the application of the code is guaranteed can the industrial relations system be called autonomous and autopoietic.

Luhmann calls the invention of codes the technically most efficient and consequential form of differentiation of function systems. The main function systems structure their communication with a binary code which claims universality with respect to the respective specific function and also claims the exclusion of third possibilities (Luhmann 1989: 36-37).

Luhmann has analysed several binary codes of function systems. He defines the code for the scientific system to be the opposition of truth and untruth; the code of the economy is payment and non-payment; and the code of the legal system is law and non-law. I propose to call the binary code of the industrial relations system *negotiable or non-negotiable between collective industrial actors*. Like other binary codes the code of the industrial relations system entails a paradox insofar as the code itself cannot be justified by applying the code. The distinction between negotiable and not negotiable is itself not negotiable for the industrial relations system.

It is possible to demonstrate the idea of element and structure of autopoietic industrial relations in reconstructing the definition of industrial relations offered by Walther Müller-Jentsch. This definition includes major features of a definition of industrial relations as an autopoietic social system. Müller-Jentsch emphasises that

interactions between persons, groups and organisations are the object of industrial relations from which norms, contracts and institutions result (Müller-Jentsch 1986)¹³. In systems theory terms he identifies interactions as relations of communications from which the structure of the system derives. Interactions appear in this definition as abstractions, which inhabit complex relations between management and employees, employers associations and unions or between persons, groups and organisations; and these relations can be conflictual or consensus oriented. However, the main radicalisation of autopoietic systems theory in the study of industrial relations lies in the analysis of the self-reproductive process. Interactions and their derivative institutions form conditions and programs for operational closure and cognitive openness. Interaction in industrial relations is communication, which produces communication. Collective bargaining produces new collective bargaining; grievance processing produces new grievance processing.

The industrial relations system is a complex system, which creates its structure by selecting among certain relations of its elements. The introduction of the criterion collectivity is such a selection. Collectivity is both an abstraction from individual relations and a way to reduce the complexity of relations of employees and employers to those communications in which collective representatives operate on behalf of the employees.

When industrial relations are conceived as social systems that operate in a society consisting of several functionally differentiated social systems they have to manage both the internal and the external complexity. In fact industrial relations have to manage a higher internal complexity than most other function systems of society. This is related to its specific form of organisation, or, more precisely, the requirement of interaction between organisations. The vast majority of function systems including the religious, the political, the economic, the legal and the scientific system, adopt organisation as their form of achievement of function and production of performance. In his analysis of the economic system (Luhmann 1988: 302-323) and the scientific system (Luhmann 1990a: 672-680), Luhmann emphasises competition among organisations as a structural principle. Fulfilment of function needs openness, which is usually guaranteed by a plurality of organisations (competition among political parties, universities, corporations). Industrial relations are characterised by reflexive organisation, i.e. organisation of organisation. However even among reflexive organisations competition is possible. In addition to union competition and competition among employer organisations a plurality of forms of collective bargaining is possible.

3.4 Intersystemic Relations of the Industrial Relations System in Society

¹³ Müller-Jentsch 1986: 17: „Arbeits- oder industrielle Beziehungen bezeichnen jene eigentümliche Zwischensphäre im Verhältnis von Management und Belegschaft, von Arbeitgeberverbänden und Gewerkschaften, deren eigentlicher Gegenstand friedliche oder konfliktorische Interaktionen zwischen Personen, Gruppen und Organisationen sind, sowie die aus solchen Interaktionen resultierenden Normen, Verträge und Institutionen.“

The relation of the industrial relations system to other second order social systems is described by Luhmann as one of performance rather than function. In functionally differentiated societies social systems have to relate to each other „horizontally“ through performances; the function describes the relation with society. A relation of performance between two second order social systems is established when the means used by one system to achieve a certain effect in another system are compatible with the structure of the other system (Luhmann 1981: 84).

Luhmann's distinction of function and performance enables one to criticise the inflationary use of the term function in industrial relations research. Walther Müller-Jentsch (Müller-Jentsch 1986: 158-202), for example, defines several „functions“ of collective bargaining which are in some cases better described as performances of the industrial relations system. His list of collective bargaining functions include protection of living standards, distribution of income and contribution to industrial democracy are not only benefits for employees but also performances of the collective bargaining system for the economic system. The creation of uniform conditions of production through standardisation of wages and working time and through reinforcement of stable wage structures and working conditions are performances which benefit the whole group of employers. And the autonomy of collective bargaining benefits the state insofar as it relieves the political system from regulating working conditions; it increases rather than decreases the legitimation of the state and the government. Furthermore, what Walther Müller-Jentsch calls „societal effectiveness“ (*gesellschaftliche Effektivität*) of collective bargaining describes, in fact, the function of collective bargaining and, indeed, of the whole industrial relations system, when he considers it to contain and canalise conflicts (Müller-Jentsch 1986: 160).

In describing relations between function systems Luhmann distinguishes between temporary performance relations and long-term structural coupling. Within the evolutionary process function systems have the chance to become structurally coupled. Important examples are the coupling of the legal and the political system via a constitution and the coupling of the legal and the economic system via contract and property (see Luhmann 1993, ch. 10).

Industrial relations systems tend to develop their performance relations with the political and the legal system into intersystemic exchange relations. These exchange relations are often tripartite in nature with the two industrial actors interacting with state officials. If recurrent meetings of the three parties take place on a regular basis, such institution is commonly referred to as a corporatist arrangement. However, the intersystemic relations between the industrial relations system and its surrounding neighbour systems can only flourish when the industrial relations system is secure in its own autonomy and autopoiesis. Corporatist arrangements can only benefit the industrial relations system if it is strong enough to resist direct determination and can use corporatist arrangements for internal creation of structures. And the political and legal systems benefit only from participation in corporatist arrangements as long as the industrial relations system can offer performances, which are useful for their internal communications. The political and the legal system will only maintain their

support in the long run when the industrial relations system is strong enough so that the other systems can receive something in return for their contribution to the industrial relations system which lies in their participation in corporatist networks. Thus autonomisation and interdependence are not exclusive but co-evolutionary processes (see also Willke 1989: 90; Rosewitz and Schimank 1988: 298-304).

Although there are a number of discussions in Luhmann's work which are related to problems of an industrial relations system, he has not directly applied his theory and analyses of social systems to a discussion of industrial relations as a social system. This might have theoretical reasons. But it might also be due to Luhmann's anti-Marxist convictions. Luhmann resents that the „exhausted“ Marxist theory of society dominates both a number of discourses within sociology and descriptions of our system of society (Luhmann 1988: 168). Luhmann's anti-Marxism, however, should not prevent research from describing industrial relations as a social system. In fact, Luhmann's self-inflicted resistance to industrial relations leaves some space for his students to advance autopoietic systems theory and to apply it to one of the rare fields which have not been treated by an exhaustive study by Luhmann himself.

4. Industrial Relations in the World Society

For Luhmann the modern society is the result of a process of evolution from earlier forms of societies. Predecessors of the modern functionally differentiated society are segmented and stratified societies. Furthermore he challenges the notion of a national society. For him there exists only one modern society, which is the world society. In his later writings, and in particular in his opus magnum, the *Gesellschaft der Gesellschaft*, he postulates with quite some rigour that viewing society as the all-embracing social system implies that there exists only one society, and this is the world society (Luhmann 1997, Vol. I: 145). The world society is differentiated spatially into regions and functionally into function systems.

To view the social system of industrial relations as part of the world society thus leads to a reassessment of international developments. Industrial relations that operate in the context of the world society are confronted with processes of globalisation. However, there are both challenges and opportunities deriving from globalisation. Globalisation of trade and manufacturing and in particular internet-related service activities have led to new demands for regulation. The introduction of international standards includes social regulations that affect industrial relations. There are several attempts to add a 'social dimension' to globalisation by establishing a global legal framework of labour standards. International labour law derives foremost from labour standards introduced by the International Labour Organisation. Links of trade measures and labour rights (the so-called social clause), enforced by the World Trade Organisation (see Myrdal 1994), and economic and social rights as part of universal human rights are currently promoted as new sources of global labour law. The lively debate will possibly lead to further legislative efforts to create minimum labour standards at the global level. However the major obstacle of weak enforcement of these standards is also likely to remain. Furthermore, new forms of co-operation and

joint collective decision-making emerge within multi- or trans-national companies, sometimes supported by law. A good example in this respect are European works councils introduced within the European Union.

If globalisation is mainly associated with markets and free trade, the adoption of labour law and collective bargaining at supranational and international level indicate the limits of globalisation. An entirely free world market will not be able to retain growth over a longer period. It seems likely that the world market, like all other markets, requires 'state intervention' to achieve „growth with stability“ (Boyer/ Drache 1996).

Insofar as industrial relations and collective bargaining at international level are concerned, much will depend on the role of collective organisations. Industrial relations are fragile as an autonomous function system because the organisation of collective bargaining depends on the future of interest representation. The autopoiesis of collective bargaining requires an organisational structure, which protects it not only from interventions from other social systems like the political, the economic and the legal system but also from fluctuations and changes in the unions and employer associations. Since support from an active welfare state and law is lacking, traditional trade union internationalism will have to find new partners at the global level. Possible candidates are social movements, which promote human rights, in particular those of migrants. In utopian versions of a law of humankind, which creates the basis of a global community, replacing both the state and the market as regulatory sites, labour might find support and a place in transnational coalitions (Sousa Santos 1995: 365-373).

However, it is more likely that the globalisation of the labour movement takes place at home. Indeed, increased recognition of the local through global exposure already supports labour movements in their endeavours. Achievements at the workplace and in collective negotiations can rapidly be disseminated in the global world. Furthermore the global challenge to workplace industrial relations releases new energies to defend and even strengthen existing institutional regimes (Bélanger/Edwards/Haiven 1994). It is one of the main strengths of the autopoietic perspective to be able to understand that industrial relations of advanced national economies, in conjunction with a reflexive type of labour law (see Rogowski/Wilthagen 1994), become mediating forces which protect their achievements through endorsement of their global role (see Wilthagen 1998). Insofar as collective bargaining at sectoral and company level and national labour law systems are able to accept the global challenge through reflecting their global position, these confident local, regional and national industrial relations will constitute important premises of the world society.

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